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25 YEAR RE-REVIEW

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4. Observations - Zavod #1, Podberesje

(a) General

(1)

In September,

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the Junkers Plant at Dessau, took up operations again. The first few months were entirely devoted to cleaning the plant of rubble, salvaging old machines, mending some of the buildings which were not damaged beyond repair, and generally preparing the plant for the resumption of production. The plant was ready to resume production in the spring of 1946. The Soviets gave the plant the assignment to continue the development of the two types of planes which were under construction at the end of World War II: the EF-126 and the JU-287.

(2) When the Soviets dismantled the plant in summer 1946, they removed not only the machines and machine tools, but also took all metals which were stored in the plant. They even shipped the entire supply of drawing paper to the USSR. The wind tunnel which was installed at Dessau was completely dismantled, leaving only the masonry; the tunnel was taken to Podberesje where it was dumped in an open field and left rotting.

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(3) The Junkers personnel, consisting of all types of engineers, draftsmen and mechanics, were deported to Podberesje on 22 Oct 46. There was an old aircraft plant at Podberesje, which had been destroyed by the Germans and which had been completely stripped of equipment. Two seaplanes were moored at the pier of the plant on the "Moscow Sea". The first months of the work at Podberesje were devoted exclusively to the effort of re-equipping the plant. [] usually worked in one department at a time and, as soon as the rooms were finished, the department which was assigned to the rooms took up operations there.

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(4) The departments were staffed mainly by Germans. Even the leading positions of the individual departments were held by Germans. The Soviets were in the minority in all departments, and were generally assigned to subordinate jobs. There was no separation between Soviet and German personnel within the departments.

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(5) The Soviet personnel seemed to be narrowly specialized in their knowledge. [] Germans had the feeling that the Soviet workers had been sent to Podberesje to improve their knowledge of aircraft design and building.

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[] the departments of the plant were highly specialized and it was strictly forbidden for members of one department to show interest in the operations of any of the other departments.

(b) EF-130

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The first type of plane [] at Podberesje was the JU-287, which was given the type number EF-130. The only variation from the JU-287 was the use of Mikulin engines instead of the Junkers engines which were installed in the JU-287. The EF-130 is a shoulder wing type with swept forward wings and positive dihedral. The six turbo-jet engines were arranged in pods of three, mounted mid-span under each wing. The landing gear consisted of one dual wheel in the mid-section of the fuselage, with one auxiliary gear in the nose, and an auxiliary gear on the tip of each wing. The horizontal stabilizers were located at the bottom of the vertical.

(c) EF-131

In 1948, the Soviets gave the Junkers Group an assignment to start construction of a new type airplane which they called the EF-131. This type was only a variation of the EG-130; the only differences were:

- (1) Two mid-span mounted Mikulin jet-engines, instead of the six engine configuration.
- (2) The horizontal stabilizers were moved up to the middle of the vertical.
- (3) Slight changes of the armament.

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(d) KF-140

In the beginning of 1950, the Junkers Group was given the assignment of designing a new plane, called the KF-140. This plane showed considerable variation from the two previous types. It was a larger plane with two mid-mounted Mikulin turbo-engines. The wings which were swept backward showed a break both in the plan and in the front view.

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The horizontal stabilizer was on top of the vertical fin.

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mock-up and some finished parts, including the fuselage, the cockpit, and the landing gear, which was the same as described for the KF-130.

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(e) Stress and Weight Department

The section of the Junkers Stress Department was assigned to the analysis of the fuselage section between the cockpit and the bomb bay. The entire static department was under the direction of Dipl Ing Walzel, who was an authority on stress analysis and the author of tables which gave the properties of various metals. The weight analysis group's work was directed by Dipl Ing Lammel, and Dipl Ing Paasch was chief of the air load analysis group. While Dipl Ing Walzel was in charge of the technical part of the Static Department, Dipl Ing Waldemar Quenther directed the organization and work distribution of the department.

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(f) Load Factors Used in Stress Calculation

The calculation of the tensile strength of the various parts was done in the following manner. The air loads for various flight conditions were established for every part of the airplane. The air load for the most critical condition was taken and multiplied by 1.8 and sometimes by 2.0 to get the ultimate load to which the part was designed.

(g) Soviet Materials

The group did not test any Soviet metals. (Tests of metals were made in the metallurgical department.) The designers were given lists of Soviet metals which gave the specifications as to weight, strength, etc. They chose the metals from this list only. It occasionally happened that the needed metals were not listed; in that case, the designer either had to make a special search for such metals, use metals which were dismantled from German plants, or try to get the Soviets to requisition material out of the current production of another plant. In general, the tensile strength of the metals was not so great a problem as the forging or welding qualities. When the available metals could not be forged, the designers tried to improvise by using welded assemblies - sometimes with success and sometimes not. In some cases, the strength of a joint could be increased by using thicker skin to reduce the stresses in the fitting.

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-6-(b) Working Conditions

- (1) The pressure of work was great in Podberesje. In the first place, there was a spirit of ambition among the Germans to show the Soviets the quality of their work. In the second place, the Soviets kept referring to "another aircraft factory" where German personnel were also employed and which was "far ahead" of Zavod #1 operations and developments.
- (2) The security at Podberesje was very strict. It was dangerous to enter a department other than one's own without having a valid excuse. The papers on which the Junkers Group had their calculations, were numbered and collected every evening in a metal box, which was handed to the Head of the First Department, Jurshin. When they handed in their boxes in the evening, they were given a number which would identify their box on the following morning. Checks were made on the contents of their boxes.

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